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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/971,803	10/03/2001	Thomas Ferianz	1406/21	3293

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SUITE 1400
DURHAM, NC 27707

EXAMINER

TIEU, BINH KIEN

ART UNIT	PAPER NUMBER
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2643

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DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/971,803

Applicant(s)

FERIANZ, THOMAS

Examiner

BINH K. TIEU

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany, Prior Foreign Application 100 49 331.9 on 10/05/2000. It is noted, however, that applicant has not filed a certified copy of the German foreign application as required by 35 U.S.C. 119(b). It is also noted that a sheet of paper filed along with the "Response To Notice To File Missing Parts – Filing Date Granted" on 01/25/2002 indicated on items #6 that "A certified copy of the German foreign application" was enclosed. However, Examiner did not see such certified copy of the German foreign application attached to the mailing package as well as to the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-8, 10-11 and 15-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Liu et al. (U.S. Pat. #: 6,751,315).

Regarding claim 1, Liu et al. ("Liu") teaches a broadband driver (see figure 2) for signals that are transmitted in different frequency ranges (telephone voice signal and xDSL high frequency data signals), comprising:

- (a) a first broadband driver circuit for driving first signals having signal frequencies that lie in a first frequency range (i.e., Low Pass filter 52 for driving telephone voice signals);
- (b) a second broadband driver circuit for driving second signals having signal frequencies that lie in a second frequency range (i.e., High Pass filter 41 for driving high frequency data signals);
- (c) wherein at least one of the two broadband driver circuits has a frequency-dependent positive-feedback circuit (i.e., RC 56, 56' of balanced op-amp 54, or R 39 of balanced op-amp 38) for impedance synthesis of a frequency-dependent output impedance of the broadband circuit, and where the output impedance has a different value in the first frequency range than in the second frequency range (col.5, line 32 – col.6, line 13).

Regarding claim 2, see figure 4, note col.5, lines 49-57.

Regarding claim 3, note col.5, lines 13-30.

Regarding claims 4-8 and 10-11, note op-amp 54 and RC 56 and 56' in figure 2.

Regarding claims 15-16, note col.5, lines 18-25.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (U.S. Pat. #: 6,751,315) in view of Ahuja et al. (U.S. Pat. #: 6,281,747).

Regarding claims 12-14, Liu teaches all subject matter as claimed above, except for signal outputs of op-amps 54 and 38 are connected in parallel to each other and to a transformer. However, Ahuja et al. ("Ahuja") teaches a power efficient line driver comprising output signals of op-amps 212 and 214 connected in parallel, to a transformer and to a two-wire telephone line as shown in figures 2b and 6, col.4, lines 41-47 for a purpose of delivering power to low impedance load.

Therefore, it would have been obvious to one of original skill in the art at the time the invention was made to incorporate the use of the feature of signal outputs of op-amps being connected in parallel to each other, to a transformer and to a two-wire telephone line, as taught by Ahuja, into view of Liu in order to adjust supply voltage to both broadband drivers.

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liu et al. (U.S. Pat. #: 6,751,315) in view of Bingel (U.S. Pat. #: 6,314,180).

Regarding claims 12-14, Liu teaches all subject matter as claimed above, except for the complex impedance of the positive-feedback circuit decrease as the signal frequency increases. However, Bingel teaches such feature in col.6, lines 13-37 for a purpose of controlling forward path gain, used to transmit signals.

Therefore, it would have been obvious to one of original skill in the art at the time the invention was made to incorporate the use of the feature of the complex impedance of the

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positive-feedback circuit decrease as the signal frequency increases, as taught by Bingel, into view of Liu in order to improve and to maintain high speed data transmission rates on subscriber telephone loop.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh K. Tieu whose telephone number is (703) 305-3963 and E-mail address: BINH.TIEU@USPTO.GOV.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz, can be reached on (703) 305-4708 and **IF PAPER HAS BEEN MISSED FROM THIS OFFICIAL ACTION PACKAGE, PLEASE CALL Customer Service at (703) 306-0377 FOR THE SUBSTITUTIONS OR COPIES.**

Any response to this action should be mailed to:

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Washington, D.C. 20231

Or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist, tel. No. 703-305-4700).



BINH TIEU
PRIMARY EXAMINER

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Date: June 17, 2004